1423 TRANSIENT CELL MEDIATED IMMUNE DEFICIENCY ACCOMPANYING CONGENITAL ISIOPATHIC CHYLOTHORAX. Lakshmi Katikaneni, Abner Levkoff, Robert Galbraith. Medical University of South Carolina, Department of Pediatrics.

During the management of a 3 kg term black female infant whose chylothorax was diagnosed at 7 days of age, a total of 450 ml of chyle was removed by repeated thoracentesis before spontaneous healing occured. The total number of lymphocytes removed during 18 days was greater than 10^9. Monoclonal antibody studies showed 95% of these cells were T-lymphocytes which were functionally immature as evidenced by their non-responsiveness to mitogen. There was no associated peripheral blood lymphopenia. Nevertheless, peripheral T-cells were abnormal as shown by lack of sheep RBC rosette formation and lack of response to mitogens. The thymus which was absent during the 18 days of therapy, reappeared 2 weeks after disappearance of the chylothorax accompanied by normalization of peripheral T-lymphocyte functions.

Loss of large volumes of chyle in congenital idiopathic chylothorax can cause transient severe depletion of T-lymphocytes associated with cell mediated immune deficiency as evidenced by a decrease in T-cell forming rosettes with either sheep RBC or lymphoblastoid B cell lines, and functional tests of cellular immunity.

1424 RADIONUCLIDE SCANS (RS) AND PLASMA RENIN ACTIVITY IN HYPERTENSIVE NEONATES WHO RECOVER. Lakshmi Katikaneni Dilip Purohit, Leonie Gordon, Abner Levkoff. Medical University of South Carolina Department of Pediatrics and Department of Nuclear Medicine.

Radionuclide scans (RS) and plasma renin activities (PRA) were analyzed in 11 infants with symptomatic hypertension (SNH) diagnosed in the intensive care nursery over a period of 4 years. All infants at the time of diagnosis had abnormal unilateralrenal scans (decreased perfusion and/or decreased glomerular filtration and high PRA (27-815 ng/ml/hr) except for one with normal PRA. Follow-up renal scans performed during the next 2-4 week period showed improvement in 8 out of the 11 infants. Subsequent renal scans showed no further improvement. The normalization of PRA occured over a period of 4-12 months. Antihypertensive therapy could only be discontinued when PRA returned to normal (<10 ng/ml/hour). Of the three infants who had no improvement in renal scan and did not respond to medical management, 2 required surgical nephrectomy. One underwent autonephrectomy as evidenced by absent perfusion of the involved kidney, normalization of initial high PRA and resolution of hypertension.

Hypertensive infants with early improvement of impaired renal scans are amenable to medical therapy with resolution of hypertension.

1425 NEONATAL COMPLICATIONS FOLLOWING IN-UTERO EXPOSURE TO INTRAVENOUS RITODRINE. Nadya J. Kazzi, Thomas L. Gross, George M. Kazzi, Thomas J. Williams, Dept. of Peds. and ob/Gyn, Metro. Hospital/CWRU, Hutzel Hospital/Wayne State University, Detroit.

Intravenous administration of ritodrine has been shown to prolong pregnancy in selected patients. However, the drug has been associated with maternal cardiovascular and metabolic derangements. If tocolytic therapy fails and the neonate delivers soon after ritodrine is discontinued, significant drug levels could increase neonatal morbidity. The purpose of this study was to examine the following neonatal outcomes: Apgar score 1 min. and 5 min., neonatal pH, plasma bicarbonate,hypotension, hypoglycemia, respiratory distress syndrome & neonatal mortality in infants exposed to IV ritodrine within 12 hours of delivery. Fifty-eight neonates delivered within 12 hours of discontinuing intravenous maternal ritodrine were matched for birthweight and gestational age with 58 control infants without ritodrine exposure. The study infants had a mean GA of 32.8 + 2.8 wks. & a mean BW of 1744 + 512 gm. The potential effect of the total ritodrine dose used and the drug discontinuance to delivery intervals (DDDI) on the 8 neonatal outcomes were evaluated. The frequencies of maternal medical and obstetric complications were similar in both groups. PROM and prolonged rupture of membranes >12 hours were more common in the control group ($p<0.001$). Of the neonatal morbidity variables examined, only hypoglycemia occurred more frequently in the ritodrine exposed neonates as compared to control group. Stepwise discriminant analysis and stepwise multilinear regression failed to reveal an effect of total maternal ritodrine dose, and DDDI on the occurrence of the neonatal morbidity variables. The analysis showed that gestational age was a good predictor of RDS and neonatal death but that ritodrine dose and DDDI did not add significantly to the prediction of any neonatal complications. These findings suggest that ritodrine used per protocol is not associated with a significant increase in neonatal morbidity.

=1426 AN ENHANCED METHOD TO MONITOR CEREBRAL BLOOD FLOW IN NEWBORNS : NON-FAST FOURIER TRANSFORM (FFT) SPECTRAL ANALYSIS OF DOPPLER BLOOD FLOW VELOCITY. Catherine M.P.Kierney. Pritzker Sch.of Med., Univ. of Chicago, Michael Reese Hosp.,Dept.of Ped.,Chicago(Spon.by John B.Paton)

We have developed, using non-FFT signal processing techniques, a new method of analysis of continuous wave (CW) Doppler ultrasound signals obtained by placing a probe over the anterior fontanelle of the newborn. The best orientation of the probe with respect to the vessel is identified using headphones. Three electrocardiograph (EKG) electrodes are placed over the chest. The Doppler and EKG audio signals are recorded simultaneously on a tape recorder, digitized by computer, transferred to an IBM Personal Computer where they are analyzed, averaged and displayed. An "averaged" signal consists of the previous 5 signals. Using this method the relative quantities of red blood cells moving at different velocities can be discerned and are represented by different colors on the color monitor. We have studied 14 well and 2 sick term infants. The well infants were studied on three consecutive days. Both right and left sides, and several probe sizes and probe frequencies were studied. The signal is quite reproducible between left and right sides, between studies in the same infant on different days, as well as between infants. We have determined the spectral pattern in term infants, and have, in one sick infant, identified asymmetry between R & L when there was facial pallor during a prostaglandin infusion. This qualitative method should prove useful in monitoring cerebral blood flow in newborns.

1427 ISOLATED CEREBRAL VENTRICULAR DILATATION (VD) OF LOW BIRTH WEIGHT (LBW) NEONATE AND ITS SIGNIFICANCE. Young M. Kim, Mehmet Y. Dincsoy, Mamerto Garcia, Paul Berger, Susan Tuck. (Spon. by Norman L. Gootman). Health Sciences Center, SUNY at Stony Brook, Nassau County Medical Center, Departments of Pediatrics and Radiology, East Meadow, NY.

VD is not an infrequent observation during an ultrasound (US) examination of the head in LBW newborns. Very little information is available with regard to its pathogenesis, evolution and significance. We studied 59 LBW infants who were identified as having VD [VD(+)] by the first cranial US examination (US #1) which was done during the immediate neonatal period (mean age 3.03 days) and compared with 59 wt and gestation matched controls without VD [VD(-)] who were selected with no knowledge of the result of US findings. US follow-up of the study and control infants are shown in the following tables (#, $\bar{X}\pm$SEM):

	US-#1	US-#2	US-#3
Study Group VD(+)/(-)	59/0 (100%)	38/10 (79%)	28/8 (78%)
PVH,IVH,PH:(+)/(-)	0/59 (0%)	2/46 (4.2%)	3/33 (8.3%)
Controls:VD(+)/(-)	0/59 (0%)	4/30 (12%)	3/18 (14%)
PVH,IVH,PH(+)/(-)	10/49 (17%)	10/24 (29%)	6/15 (29%)

	Gest(wk)	Wt (g)	Apgar 5 min	Mortality	Race (B/W)
VD(+)	31.5±0.4	1500±48	8.1±0.2	2/59 (3.4%)*	14/42 (29%)*
VD(-)	31.8±0.4	1511±47	7.6±0.3	9/59 (15.3%)	28/31 (48%)

*X^2 test:$p<0.025$

The isolated VD seems to have a relatively benign neonatal course. The higher incidence in white infants was unexpected and needs to be confirmed in a larger study.

1428 SEX DISTRIBUTION IN INTRACRANIAL HEMORRHAGE AND CEREBRAL VENTRICULAR DILATATION (VD) IN LOW BIRTH WEIGHT INFANTS (LBW). Young M. Kim, Mehmet Y. Dincsoy, Foazia Siddiq, Mamerto Garcia, Behzad Talebian, Susan Tuck. (Spon. by Norman L. Gootman). Health Sciences Center, SUNY at Stony Brook, Nassau County Medical Center, Departments of Pediatrics and Radiology, East Meadow, NY.

The effect of sex on perinatal mortality is well known and morbidity has been under investigation. Higher incidence of periventricular hemorrhage (PVH) in males has been reported by others. On the basis of a first cranial ultrasound (US) examination, the following sex distribution was found in this study of 59 LBW infants which was designed to examine the incidence of PVH, intraventricular hemorrhage (IVH), parenchymal (PH) hemorrhage, isolated VD and the control infants who had no lesions:

US-#1	n	PH	IVH	PVH	VD
Female (+)/(-)	23	4/19 (17)**	3/20 (13)*	8/15 (35)	2/21 (8.7)
Male (+)/(-)	36	0/36 (0)	13/23 (36)*	9/27 (25)	4/32 (11)

*$p<0.25$, **<0.005:(+)=present, (-)=absent

A similar trend persisted throughout the 2nd and 3rd US. In a separate larger study, designed to examine the incidence of VD present (+) against the VD absent (-) control group on the basis of the first US examination, VD (+)/(-) ratio was 24/32 (43%) for females, 35/27 (57%) for males ($<p<0.10$,ns). There appears to be a higher incidence of male involvement in IVH and no difference in PVH. The male preponderance in VD is not clearly demonstrated here and must be negligible if present. Higher incidence of PH in females detected here must be interpreted with caution since the number of involved cases is small.